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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,496	09/22/2003	Zhiqiang Wei	0020-5179P	6865

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EXAMINER

CLEVELAND, MICHAEL B

ART UNIT PAPER NUMBER

1762

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,496

Applicant(s)

WEI ET AL.

Examiner

Michael Cleveland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 092203.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-6 in the reply filed on 3/28/2005 is acknowledged. The traversal is on the ground(s) that there would be no serious burden on the examiner. This is not found persuasive because a serious burden exists in the differing issues likely to arise during the prosecution of the different inventions.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 7-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in the reply filed on 3/28/2005.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Qiu et al. (U.S. Patent 6,419,849, hereafter '849).

'849 teaches a method for preparing a thin film of metal oxide containing one or more metal elements on a substrate comprising the steps of:

applying a sol-gel solution containing one or more metal elements, such as lead and barium (col. 9, lines 13-17; col. 16, lines 1-8) to a surface of said substrate (col. 9, lines 7-50);
drying said sol-gel solution to prepare a dried gel film on said substrate (col. 9, lines 51-67);

soaking said dried gel film on said substrate in an alkaline aqueous solution containing barium (col. 10, lines 9-22) or lead (col. 10, lines 51-64) in a container;

sealing the container (The container must be sealed in order to achieve desired superatmospheric pressures (col. 10, lines 23-64).); and

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performing hydrothermal treatment for said dried gel film on said substrate in the sealed container to prepare said thin film of metal oxide on said substrate (col. 10, lines 9-64).

Claims 2-3: The temperature may be 140 °C (col. 10, lines 27-28).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qiu '849, as applied to claim 1, above, and further in view of Lee et al. (U.S. Patent 5,763,092, hereafter '092).

'849 is discussed above, but does not explicitly teach boiling the alkaline aqueous solution before soaking. '849 teaches that its hydrothermal process occurs to replace atoms in the structural lattice with other desired atoms (col. 3, lines 26-61) in order to obtain a particularly desired (perovskite) crystal structure. However, '092 teaches that hydrothermal treatment solutions used to treat oxide films may be boiled in order to avoid the undesirable incorporation of carbon into the films (col. 5, lines 40-59). Therefore, taking the references as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have boiled the hydrothermal treatment solution of '849 before immersing the substrate in order

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to have avoided the incorporation of carbon into the oxide film of '849 because '849 does not desire carbon in the film.

8. Claim 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiu '849, as applied to claim 1, above, and further in view of Ohmori et al. (U.S. Patent Application Publication 2002/0150531, hereafter '531).

'849 is discussed above. It teaches that the titanium sol precursor may be a titanium alkoxide (col. 9, lines 35-37). It does not explicitly teach that the barium precursor is barium acetate. However, barium acetate is known as a suitable precursor for the formation of piezoelectric barium- and lead-containing titanate sol-gel films using titanium alkoxides. See, e.g., '531, Abstract, [0022, 0029]. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used barium acetate as the particular barium precursor of '849 with a reasonable expectation of success because '531 teaches that barium acetate is a suitable precursor for the formation of piezoelectric barium- and lead-containing titanate sol-gel films using titanium alkoxides.


Claim 6: '531 also teaches that the piezoelectric titanate films may contain strontium and that strontium acetate may be used as a precursor (Abstract, [0029]).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Michael Cleveland
Primary Examiner
Art Unit 1762

6/4/2005